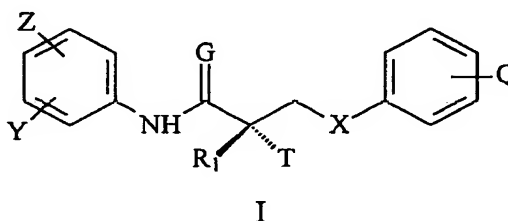


**WHAT IS CLAIMED IS:**

1. A method of treating a female subject suffering from an Androgen Deficiency in Female (ADIF)-associated condition, said method comprising the step of administering to said subject a selective androgen receptor modulator (SARM) compound, in an amount effective to treat said ADIF-associated condition.
2. The method of claim 1, wherein said method comprises administering an analog, derivative, isomer, metabolite, pharmaceutically acceptable salt, pharmaceutical product, hydrate, N-oxide, crystal, polymorph or prodrug of said SARM compound, or any combination thereof.
3. The method according to claim 1, wherein said SARM compound is represented by the structure of formula I:



wherein

G is O or S;

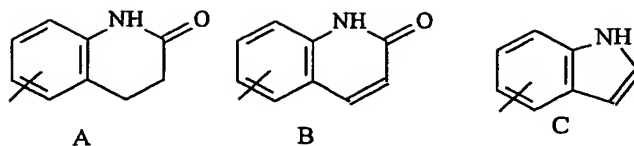
X is a bond, O, CH<sub>2</sub>, NH, Se, PR, NO or NR;

T is OH, OR, -NHCOCH<sub>3</sub>, or NHCOR

Z is NO<sub>2</sub>, CN, COOH, COR, NHCOR or CONHR;

Y is CF<sub>3</sub>, F, I, Br, Cl, CN, CR<sub>3</sub> or SnR<sub>3</sub>;

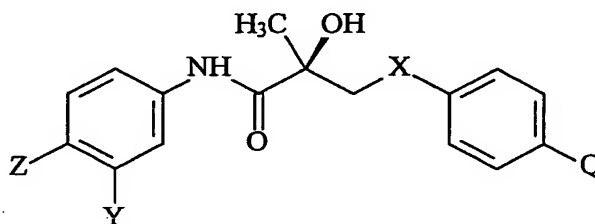
Q is alkyl, halogen, CF<sub>3</sub>, CN CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>, NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR, NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCF<sub>3</sub>, NHCSR, NHSO<sub>2</sub>CH<sub>3</sub>, NHSO<sub>2</sub>R, OR, COR, OCOR, OSO<sub>2</sub>R, SO<sub>2</sub>R, SR; or Q together with the benzene ring to which it is attached is a fused ring system represented by structure A, B or C:



R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  
 $\text{CH}_2\text{F}$ ,  $\text{CHF}_2$ ,  $\text{CF}_3$ ,  $\text{CF}_2\text{CF}_3$ , aryl, phenyl, halogen,  
 alkenyl or OH; and

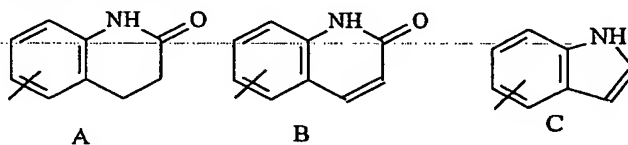
5                       $\text{R}_1$  is  $\text{CH}_3$ ,  $\text{CH}_2\text{F}$ ,  $\text{CHF}_2$ ,  $\text{CF}_3$ ,  $\text{CH}_2\text{CH}_3$ , or  $\text{CF}_2\text{CF}_3$ .

4. The method according to claim 1, wherein said SARM compound is represented by the structure of formula II.



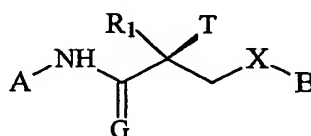
II

wherein                      X is a bond, O,  $\text{CH}_2$ , NH, Se, PR, NO or NR;  
                                     Z is  $\text{NO}_2$ , CN, COOH, COR, NHCOR or CONHR;  
 15                                Y is  $\text{CF}_3$ , F, I, Br, Cl, CN,  $\text{CR}_3$  or  $\text{SnR}_3$ ;  
                                     Q is alkyl, halogen,  $\text{CF}_3$ , CN,  $\text{CR}_3$ ,  $\text{SnR}_3$ ,  $\text{NR}_2$ ,  
                                      $\text{NHCOCH}_3$ ,  $\text{NHCOCF}_3$ , NHCOR, NHCONHR,  
                                      $\text{NHCOOR}$ ,  $\text{OCONHR}$ , CONHR,  $\text{NHCSCH}_3$ ,  $\text{NHCSCF}_3$ ,  
                                      $\text{NHCSR}$ ,  $\text{NHSO}_2\text{CH}_3$ ,  $\text{NHSO}_2\text{R}$ , OR, COR, OCOR,  
 20                                 $\text{OSO}_2\text{R}$ ,  $\text{SO}_2\text{R}$ , SR; or Q together with the benzene ring  
                                     to which it is attached is a fused ring system represented  
                                     by structure A, B or C:



R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  
 $\text{CH}_2\text{F}$ ,  $\text{CHF}_2$ ,  $\text{CF}_3$ ,  $\text{CF}_2\text{CF}_3$ , aryl, phenyl, halogen,  
 alkenyl or OH.

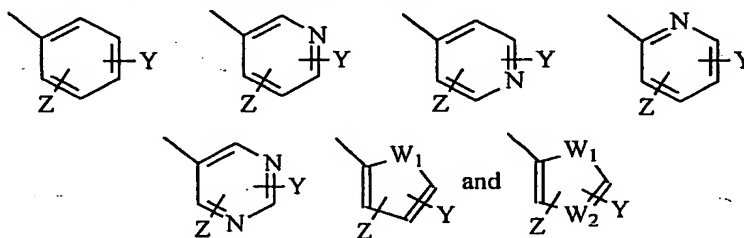
- 5 5. The method according to claim 1, wherein said SARM compound is represented  
 by the structure of formula III.



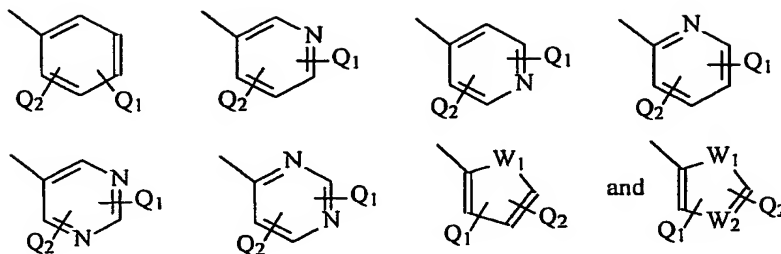
III

- 10 wherein X is a bond, O,  $\text{CH}_2$ , NH, Se, PR, NO or NR;  
 G is O or S;  
 $\text{R}_1$  is  $\text{CH}_3$ ,  $\text{CH}_2\text{F}$ ,  $\text{CHF}_2$ ,  $\text{CF}_3$ ,  $\text{CH}_2\text{CH}_3$ , or  $\text{CF}_2\text{CF}_3$ ;  
 T is OH, OR,  $-\text{NHCOCH}_3$ , or  $\text{NHCOR}$ ;  
 R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  
 15  $\text{CH}_2\text{F}$ ,  $\text{CHF}_2$ ,  $\text{CF}_3$ ,  $\text{CF}_2\text{CF}_3$ , aryl, phenyl, halogen, alkenyl or  
 OH;

A is a ring selected from:

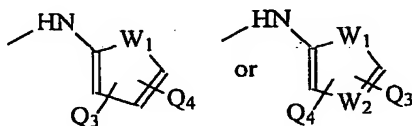


B is a ring selected from:



wherein A and B cannot simultaneously be a benzene ring;  
 Z is NO<sub>2</sub>, CN, COOH, COR, NHCOR or CONHR;  
 Y is CF<sub>3</sub>, F, I, Br, Cl, CN CR<sub>3</sub> or SnR<sub>3</sub>;

5                    Q<sub>1</sub> and Q<sub>2</sub> are independently of each other a  
 hydrogen, alkyl, halogen, CF<sub>3</sub>, CN CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>,  
 NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR,  
 NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCF<sub>3</sub>,  
 NHCSR NHSO<sub>2</sub>CH<sub>3</sub>, NHSO<sub>2</sub>R, OR, COR, OCOR,  
 10                OSO<sub>2</sub>R, SO<sub>2</sub>R, SR,



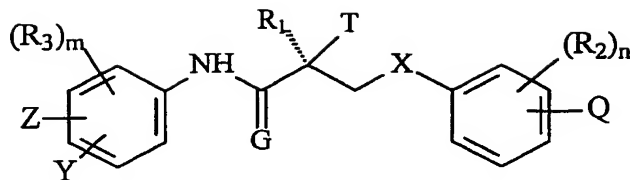
                    Q<sub>3</sub> and Q<sub>4</sub> are independently of each other a  
 hydrogen, alkyl, halogen, CF<sub>3</sub>, CN CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>,  
 NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR,  
 15                NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCF<sub>3</sub>,  
 NHCSR NHSO<sub>2</sub>CH<sub>3</sub>, NHSO<sub>2</sub>R, OR, COR, OCOR,  
 OSO<sub>2</sub>R, SO<sub>2</sub>R or SR;

                    W<sub>1</sub> is O, NH, NR, NO or S; and

                    W<sub>2</sub> is N or NO.

20

6. The method according to claim 1, wherein said SARM compound is represented  
 by the structure of formula IV:



IV

wherein X is a bond, O, CH<sub>2</sub>, NH, Se, PR, NO or NR;

G is O or S;

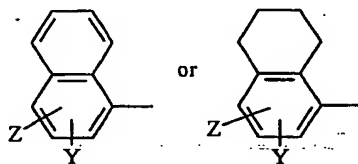
5 T is OH, OR, -NHCOCH<sub>3</sub>, or NHCOR;

R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl, CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CF<sub>2</sub>CF<sub>3</sub>, aryl, phenyl, halogen, alkenyl or OH;

10 R<sub>1</sub> is CH<sub>3</sub>, CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, or CF<sub>2</sub>CF<sub>3</sub>;

R<sub>2</sub> is F, Cl, Br, I, CH<sub>3</sub>, CF<sub>3</sub>, OH, CN, NO<sub>2</sub>, NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, alkyl, arylalkyl, OR, NH<sub>2</sub>, NHR, NR<sub>2</sub>, SR;

15 R<sub>3</sub> is F, Cl, Br, I, CN, NO<sub>2</sub>, COR, COOH, CONHR, CF<sub>3</sub>, SnR<sub>3</sub>, or R<sub>3</sub> together with the benzene ring to which it is attached forms a fused ring system represented by the structure:

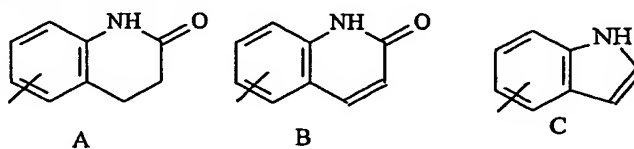


20 Z is NO<sub>2</sub>, CN, COR, COOH, or CONHR;

Y is CF<sub>3</sub>, F, Br, Cl, I, CN, or SnR<sub>3</sub>;

25 Q is H, alkyl, halogen, CF<sub>3</sub>, CN, CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>, NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR, NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCF<sub>3</sub>,

NHCSR N<sub>2</sub>SO<sub>2</sub>CH<sub>3</sub>, N<sub>2</sub>SO<sub>2</sub>R, OH, OR, COR, OCOR, OSO<sub>2</sub>R, SO<sub>2</sub>R, SR; or Q together with the benzene ring to which it is attached is a fused ring system represented by structure A, B or C:

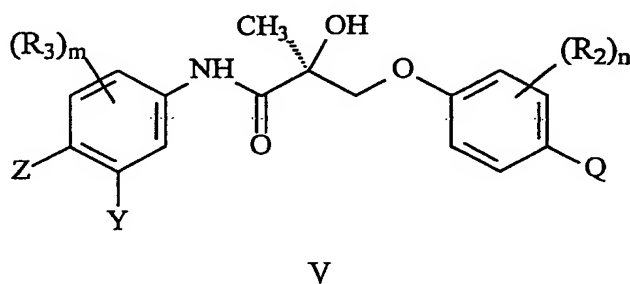


5

n is an integer of 1-4; and

m is an integer of 1-3.

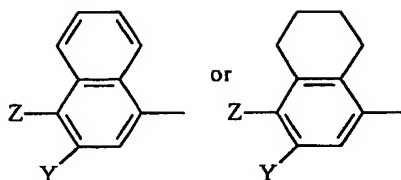
- 10 7. The method according to claim 1, wherein said SARM compound is represented by the structure of formula V:



wherein

- 15 R<sub>2</sub> is F, Cl, Br, I, CH<sub>3</sub>, CF<sub>3</sub>, OH, CN, NO<sub>2</sub>, NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, alkyl, arylalkyl, OR, NH<sub>2</sub>, NHR, NR<sub>2</sub>, SR;

- 20 R<sub>3</sub> is F, Cl, Br, I, CN, NO<sub>2</sub>, COR, COOH, CONHR, CF<sub>3</sub>, SnR<sub>3</sub>, or R<sub>3</sub> together with the benzene ring to which it is attached forms a fused ring system represented by the structure:

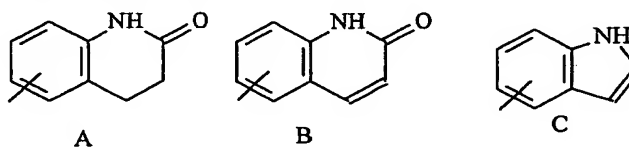


R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  $\text{CH}_2\text{F}$ ,  $\text{CHF}_2$ ,  $\text{CF}_3$ ,  $\text{CF}_2\text{CF}_3$ , aryl, phenyl, halogen, alkenyl or OH;

5 Z is  $\text{NO}_2$ , CN, COR, COOH, or CONHR;

Y is  $\text{CF}_3$ , F, Br, Cl, I, CN, or  $\text{SnR}_3$ ;

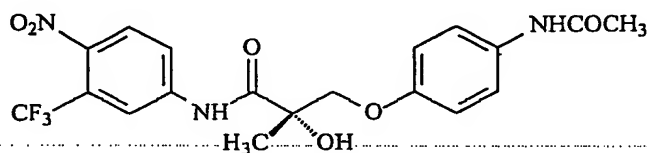
Q is H, alkyl, halogen,  $\text{CF}_3$ , CN,  $\text{CR}_3$ ,  $\text{SnR}_3$ ,  $\text{NR}_2$ ,  $\text{NHCOCH}_3$ ,  $\text{NHCOCF}_3$ ,  $\text{NHCOR}$ ,  $\text{NHCONHR}$ ,  $\text{NHCOOR}$ ,  $\text{OCONHR}$ ,  $\text{CONHR}$ ,  $\text{NHCSCF}_3$ ,  $\text{NHCSR}$ ,  $\text{NHSO}_2\text{CH}_3$ ,  $\text{NHSO}_2\text{R}$ , OH, OR, COR, OCOR,  $\text{OSO}_2\text{R}$ ,  $\text{SO}_2\text{R}$ , SR; or Q together with the benzene ring to which it is attached is a fused ring system represented by structure A, B or C:



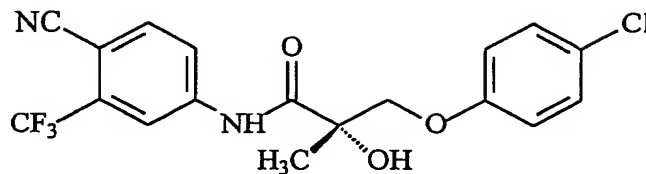
15

n is an integer of 1-4; and  
m is an integer of 1-3.

20 8. The method according to claim 1, wherein said SARM compound is represented by the structure of formula VI.



VI

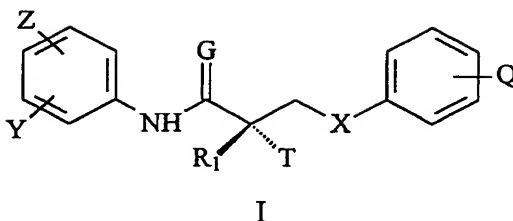


XI

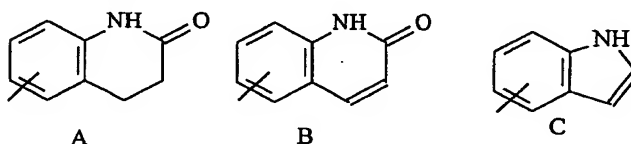
14. The method of claim 1, wherein the SARM is an androgen receptor agonist.
- 5 15. The method of claim 1, wherein the SARM has in-vivo androgenic and anabolic activity of a nonsteroidal ligand for the androgen receptor.
16. The method of claim 1, wherein the SARM is an androgen receptor antagonist.
17. The method of claim 1, wherein said SARM has an agonistic effect muscle or bone.
- 10 18. The method of claim 1, wherein said SARM has no effect on muscle or bone.
19. The method of claim 1, wherein said SARM penetrates the central nervous system (CNS).
20. The method of claim 1, wherein said SARM does not penetrate the central nervous system (CNS).
- 15 21. The method according to claim 1, wherein said administering comprises administering a pharmaceutical preparation comprising said SARM and/or its analog, derivative, isomer, metabolite, pharmaceutically acceptable salt, pharmaceutical product, hydrate, N-oxide, crystal, polymorph, prodrug, or any combination thereof; and a pharmaceutically acceptable carrier.
- 20 22. The method according to claim 21, wherein said administering comprises intravenously, intraarterially, or intramuscularly injecting to said subject said pharmaceutical preparation in liquid form; subcutaneously implanting in said subject a pellet containing said pharmaceutical preparation; orally administering to said subject said pharmaceutical preparation in a liquid or solid form; or
- 25 23. The method according to claim 21 wherein said pharmaceutical preparation is a pellet, a tablet, a capsule, a solution, a suspension, an emulsion, an elixir, a gel, a

cream, a suppository or a parenteral formulation.

24. The method of claim 1, wherein said ADIF-associated condition is sexual dysfunction, decreased sexual libido, hypogonadism, sarcopenia, osteopenia, osteoporosis, alterations in cognition and mood, fatigue, depression, anemia, muscle weakness, hair loss, obesity, polycystic ovarian disease, endometriosis, breast cancer, uterine cancer, ovarian cancer, or any combination thereof.
25. The method of claim 1, wherein said female subject is an aging female subject.
26. A method of preventing, suppressing, inhibiting or reducing the incidence of an Androgen Deficiency in Female (ADIF)-associated condition in a female subject, said method comprising the step of administering to said subject a selective androgen receptor modulator (SARM) compound, in an amount effective to prevent, suppress, inhibit or reduce the incidence of said ADIF-condition.
27. The method of claim 26, wherein said method comprises administering an analog, derivative, isomer, metabolite, pharmaceutically acceptable salt, pharmaceutical product, hydrate, N-oxide, crystal, polymorph or prodrug of said SARM compound, or any combination thereof.
28. The method according to claim 26, wherein said SARM compound is represented by the structure of formula I:



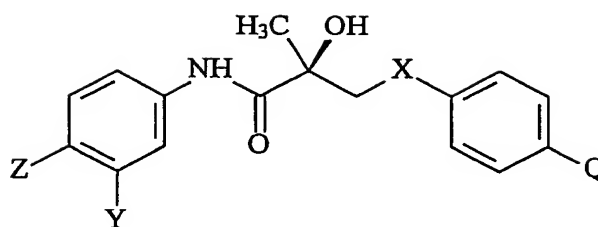
wherein G is O or S;  
 X is a bond, O, CH<sub>2</sub>, NH, Se, PR, NO or NR;  
 T is OH, OR, -NHCOCH<sub>3</sub>, or NHCOR  
 Z is NO<sub>2</sub>, CN, COOH, COR, NHCOR or CONHR;  
 Y is CF<sub>3</sub>, F, I, Br, Cl, CN, CR<sub>3</sub> or SnR<sub>3</sub>;  
 Q is alkyl, halogen, CF<sub>3</sub>, CN CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>,  
 NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR,  
 NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCF<sub>3</sub>,  
 NHCSR, NHSO<sub>2</sub>CH<sub>3</sub>, NHSO<sub>2</sub>R, OR, COR, OCOR,  
 OSO<sub>2</sub>R, SO<sub>2</sub>R, SR; or Q together with the benzene ring  
 to which it is attached is a fused ring system represented  
 by structure A, B or C:



R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  
 CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CF<sub>2</sub>CF<sub>3</sub>, aryl, phenyl, halogen,  
 alkenyl or OH; and

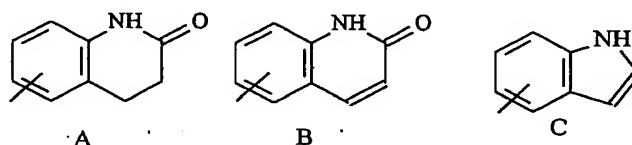
R<sub>1</sub> is CH<sub>3</sub>, CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, or CF<sub>2</sub>CF<sub>3</sub>.

29. The method according to claim 26, wherein said SARM compound is represented by the structure of formula II.



II

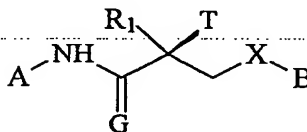
5            wherein            X is a bond, O, CH<sub>2</sub>, NH, Se, PR, NO or NR;  
                                      Z is NO<sub>2</sub>, CN, COOH, COR, NHCOR or CONHR;  
                                      Y is CF<sub>3</sub>, F, I, Br, Cl, CN, CR<sub>3</sub> or SnR<sub>3</sub>;  
                                      Q is alkyl, halogen, CF<sub>3</sub>, CN CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>,  
                                      NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR,  
 10                                NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHSCF<sub>3</sub>,  
                                      NHCSR, NHSO<sub>2</sub>CH<sub>3</sub>, NHSO<sub>2</sub>R, OR, COR, OCOR,  
                                      OSO<sub>2</sub>R, SO<sub>2</sub>R, SR; or Q together with the benzene ring  
                                      to which it is attached is a fused ring system represented  
                                      by structure A, B or C:



15

                                     R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  
                                      CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CF<sub>2</sub>CF<sub>3</sub>, aryl, phenyl, halogen,  
                                      alkenyl or OH.

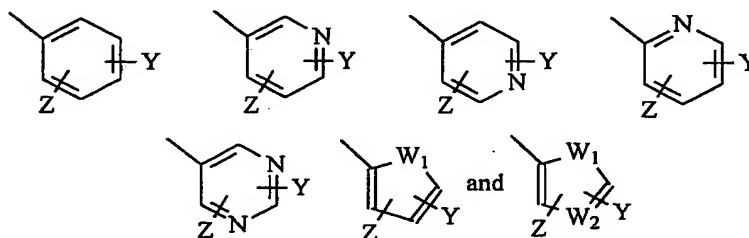
20    30.    The method according to claim 26, wherein said SARM compound is  
                  represented by the structure of formula III.



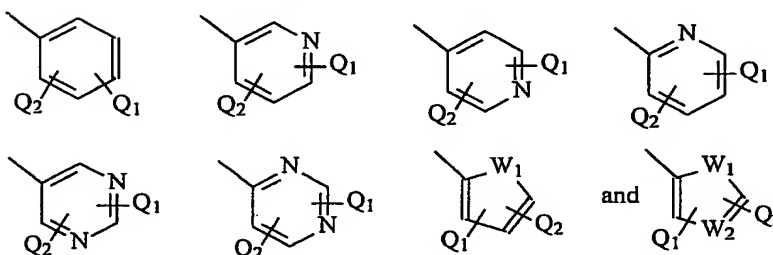
## III

wherein X is a bond, O, CH<sub>2</sub>, NH, Se, PR, NO or NR;  
 G is O or S;  
 R<sub>1</sub> is CH<sub>3</sub>, CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, or CF<sub>2</sub>CF<sub>3</sub>;  
 T is OH, OR, -NHCOCH<sub>3</sub>, or NHCOR;  
 R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  
 CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CF<sub>2</sub>CF<sub>3</sub>, aryl, phenyl, halogen, alkenyl or  
 OH;

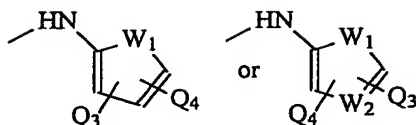
A is a ring selected from:



B is a ring selected from:



wherein A and B cannot simultaneously be a benzene ring;  
 Z is NO<sub>2</sub>, CN, COOH, COR, NHCOR or CONHR;  
 Y is CF<sub>3</sub>, F, I, Br, Cl, CN CR<sub>3</sub> or SnR<sub>3</sub>;  
 Q<sub>1</sub> and Q<sub>2</sub> are independently of each other a  
 hydrogen, alkyl, halogen, CF<sub>3</sub>, CN CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>,  
 NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR,  
 NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCH<sub>3</sub>,  
 NHCSR, NHCO<sub>2</sub>CH<sub>3</sub>, NHCO<sub>2</sub>R, OR, COR, OCOR,  
 OSO<sub>2</sub>R, SO<sub>2</sub>R, SR,

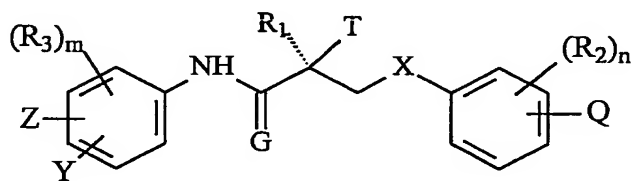


Q<sub>3</sub> and Q<sub>4</sub> are independently of each other a hydrogen, alkyl, halogen, CF<sub>3</sub>, CN CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>, NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR, NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCF<sub>3</sub>, NHCSR, NHSO<sub>2</sub>CH<sub>3</sub>, NHSO<sub>2</sub>R, OR, COR, OCOR, OSO<sub>2</sub>R, SO<sub>2</sub>R or SR;

W<sub>1</sub> is O, NH, NR, NO or S; and

W<sub>2</sub> is N or NO.

31. The method according to claim 26, wherein said SARM compound is represented by the structure of formula IV:



IV

wherein X is a bond, O, CH<sub>2</sub>, NH, Se, PR, NO or NR;

G is O or S;

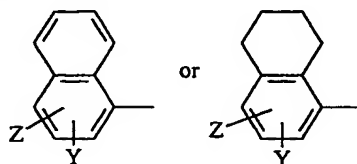
T is OH, OR, -NHCOCH<sub>3</sub>, or NHCOR;

R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl, CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CF<sub>2</sub>CF<sub>3</sub>, aryl, phenyl, halogen, alkenyl or OH;

R<sub>1</sub> is CH<sub>3</sub>, CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, or CF<sub>2</sub>CF<sub>3</sub>;

R<sub>2</sub> is F, Cl, Br, I, CH<sub>3</sub>, CF<sub>3</sub>, OH, CN, NO<sub>2</sub>, NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, alkyl, arylalkyl, OR, NH<sub>2</sub>, NHR, NR<sub>2</sub>, SR;

$R_3$  is F, Cl, Br, I, CN,  $\text{NO}_2$ , COR, COOH, CONHR,  $\text{CF}_3$ ,  $\text{SnR}_3$ , or  $R_3$  together with the benzene ring to which it is attached forms a fused ring system represented by the structure:



5

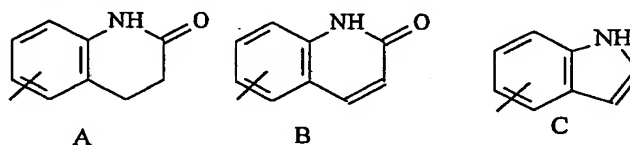
Z is  $\text{NO}_2$ , CN, COR, COOH, or CONHR;

Y is  $\text{CF}_3$ , F, Br, Cl, I, CN, or  $\text{SnR}_3$ ;

10

Q is H, alkyl, halogen,  $\text{CF}_3$ , CN,  $\text{CR}_3$ ,  $\text{SnR}_3$ ,  $\text{NR}_2$ ,  $\text{NHCOCH}_3$ ,  $\text{NHCOCF}_3$ ,  $\text{NHCOR}$ ,  $\text{NHCONHR}$ ,  $\text{NHCOOR}$ ,  $\text{OCONHR}$ ,  $\text{CONHR}$ ,  $\text{NHCSCH}_3$ ,  $\text{NHCSCF}_3$ ,  $\text{NHCSR-NHSO}_2\text{CH}_3$ ,  $\text{NHSO}_2\text{R}$ , OH, OR, COR, OCOR,  $\text{OSO}_2\text{R}$ ,  $\text{SO}_2\text{R}$ , SR; or Q together with the benzene ring to which it is attached is a fused ring system represented by structure A, B or C:

15

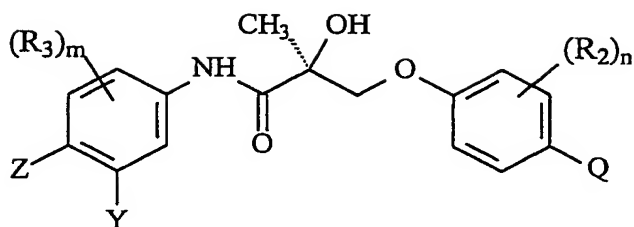


n is an integer of 1-4; and

20

m is an integer of 1-3.

32. The method according to claim 26, wherein said SARM compound is represented by the structure of formula V:

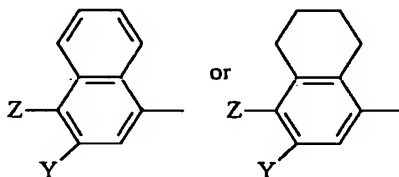


V

wherein

$R_2$  is F, Cl, Br, I,  $CH_3$ ,  $CF_3$ , OH, CN,  $NO_2$ ,  $NHCOCH_3$ ,  $NHCOCF_3$ ,  $NHCOR$ , alkyl, arylalkyl, OR,  $NH_2$ ,  $NHR$ ,  $NR_2$ , SR;

$R_3$  is F, Cl, Br, I, CN,  $NO_2$ , COR, COOH, CONHR,  $CF_3$ ,  $SnR_3$ , or  $R_3$  together with the benzene ring to which it is attached forms a fused ring system represented by the structure:



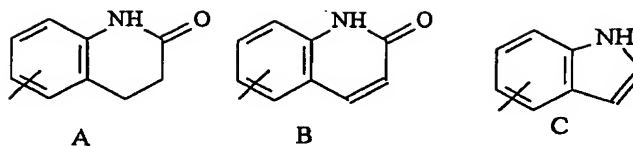
R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  $CH_2F$ ,  $CHF_2$ ,  $CF_3$ ,  $CF_2CF_3$ , aryl, phenyl, halogen, alkenyl or OH;

Z is  $NO_2$ , CN, COR, COOH, or

CONHR;

Y is  $CF_3$ , F, Br, Cl, I, CN, or  $SnR_3$ ;

Q is H, alkyl, halogen,  $CF_3$ ,  $CNCR_3$ ,  $SnR_3$ ,  $NR_2$ ,  $NHCOCH_3$ ,  $NHCOCF_3$ ,  $NHCOR$ ,  $NHCONHR$ ,  $NHCOOR$ ,  $ONCONHR$ , CONHR,  $NHCSCH_3$ ,  $NHCSCF_3$ ,  $NHCSR$ ,  $NHSO_2CH_3$ ,  $NHSO_2R$ , OH, OR, COR, OCOR,  $OSO_2R$ ,  $SO_2R$ , SR; or Q together with the benzene ring to which it is attached is a fused ring system represented by structure A, B or C:

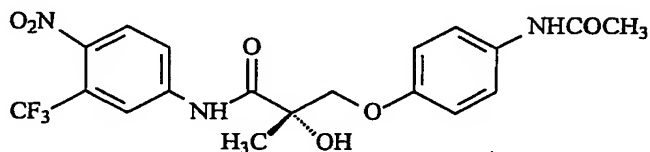


n is an integer of 1-4; and

m is an integer of 1-3.

5

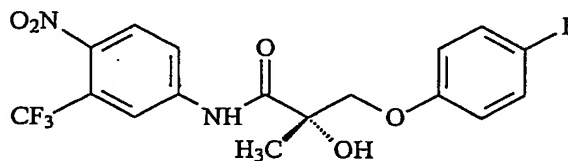
33. The method according to claim 26, wherein said SARM compound is represented by the structure of formula VI.



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VI

34. The method according to claim 26, wherein said SARM compound is represented by the structure of formula VII.

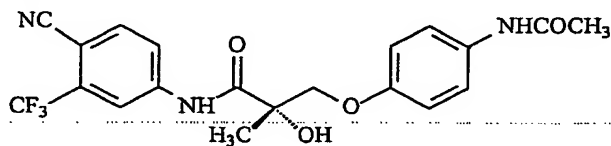


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VII

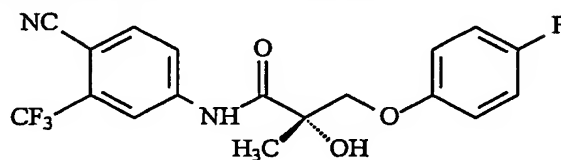
35. The method according to claim 26, wherein said SARM compound is represented by the structure of formula VIII.

20



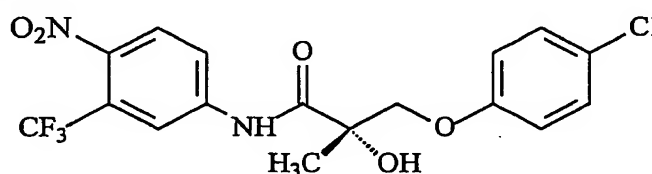
VIII

36. The method according to claim 26, wherein said SARM compound is represented by the structure of formula IX.



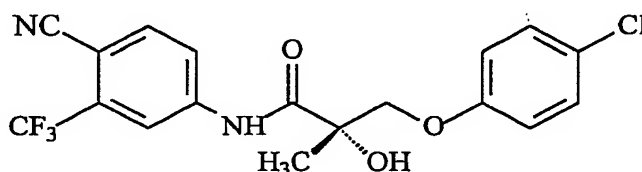
IX

37. The method according to claim 26, wherein said SARM compound is represented by the structure of formula X.



X

38. The method according to claim 26, wherein said SARM compound is represented by the structure of formula XI.



XI

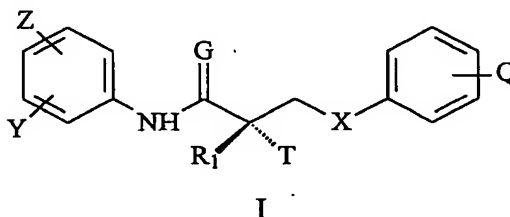
39. The method of claim 26, wherein the SARM is an androgen receptor agonist.
40. The method of claim 26, wherein the SARM has in-vivo androgenic and anabolic activity of a nonsteroidal ligand for the androgen receptor.
41. The method of claim 26, wherein the SARM is an androgen receptor antagonist.
42. The method of claim 26, wherein said SARM has an agonistic effect muscle or bone.
43. The method of claim 26, wherein said SARM has no effect on muscle or bone.
44. The method of claim 26, wherein said SARM penetrates the central nervous system (CNS).
45. The method of claim 26, wherein said SARM does not penetrate the central

nervous system (CNS).

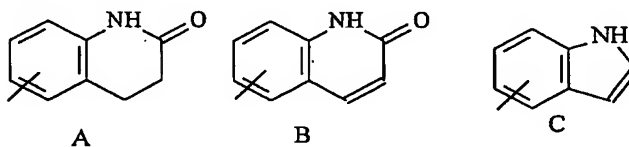
46. The method according to claim 26, wherein said administering comprises administering a pharmaceutical preparation comprising said SARM and/or its analog, derivative, isomer, metabolite, pharmaceutically acceptable salt, pharmaceutical product, hydrate, N-oxide, crystal, polymorph, prodrug, or any combination thereof; and a pharmaceutically acceptable carrier.
47. The method according to claim 46, wherein said administering comprises intravenously, intraarterially, or intramuscularly injecting to said subject said pharmaceutical preparation in liquid form; subcutaneously implanting in said subject a pellet containing said pharmaceutical preparation; orally administering to said subject said pharmaceutical preparation in a liquid or solid form; or topically applying to the skin surface of said subject said pharmaceutical preparation.
48. The method according to claim 46 wherein said pharmaceutical preparation is a pellet, a tablet, a capsule, a solution, a suspension, an emulsion, an elixir, a gel, a cream, a suppository or a parenteral formulation.
49. The method of claim 26, wherein said ADIF-associated condition is sexual dysfunction, decreased sexual libido, hypogonadism, sarcopenia, osteopenia, osteoporosis, alterations in cognition and mood, fatigue, depression, anemia, muscle weakness, hair loss, obesity, polycystic ovarian disease, endometriosis, breast cancer, uterine cancer, ovarian cancer, or any combination thereof.
50. The method of claim 26, wherein said female subject is an aging female subject.
51. A method of treating a female subject suffering from sexual dysfunction, decreased sexual libido, hypogonadism, sarcopenia, osteopenia, osteoporosis, alterations in cognition and mood, fatigue, depression, anemia, muscle weakness, hair loss, obesity, polycystic ovarian disease, endometriosis, breast cancer, uterine cancer or ovarian cancer due to Androgen Deficiency in Female (ADIF), said method comprising the step of administering to said subject a selective androgen receptor modulator (SARM) compound.

52. The method of claim 51, wherein said method comprises administering an analog, derivative, isomer, metabolite, pharmaceutically acceptable salt, pharmaceutical product, hydrate, N-oxide, crystal, polymorph or prodrug of said SARM compound, or any combination thereof.

5 53. The method according to claim 51, wherein said SARM compound is represented by the structure of formula I:



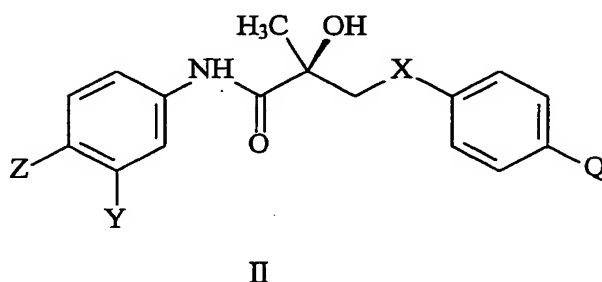
10           wherein       G is O or S;  
                               X is a bond, O, CH<sub>2</sub>, NH, Se, PR, NO or NR;  
                               T is OH, OR, -NHCOCH<sub>3</sub>, or NHCOR  
                               Z is NO<sub>2</sub>, CN, COOH, COR, NHCOR or CONHR;  
                               Y is CF<sub>3</sub>, F, I, Br, Cl, CN, CR<sub>3</sub> or SnR<sub>3</sub>;  
 15                        Q is alkyl, halogen, CF<sub>3</sub>, CN CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>,  
                               NHCOCH<sub>3</sub>,   NHCOCF<sub>3</sub>,   NHCOR,   NHCONHR,  
                               NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCF<sub>3</sub>,  
                               NHCSR NHSO<sub>2</sub>CH<sub>3</sub>, NHSO<sub>2</sub>R, OR, COR, OCOR,  
                               OSO<sub>2</sub>R, SO<sub>2</sub>R, SR; or Q together with the benzene ring  
 20                        to which it is attached is a fused ring system represented  
                               by structure A, B or C:



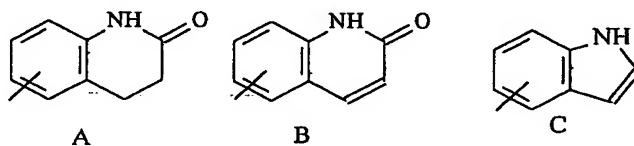
                              R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  
                               CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CF<sub>2</sub>CF<sub>3</sub>, aryl, phenyl, halogen,  
 25                        alkenyl or OH; and

                              R<sub>1</sub> is CH<sub>3</sub>, CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, or CF<sub>2</sub>CF<sub>3</sub>.

54. The method according to claim 51, wherein said SARM compound is represented by the structure of formula II.

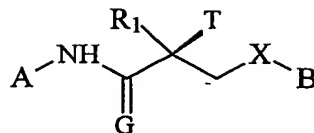


wherein X is a bond, O, CH<sub>2</sub>, NH, Se, PR, NO or NR;  
 Z is NO<sub>2</sub>, CN, COOH, COR, NHCOR or CONHR;  
 10 Y is CF<sub>3</sub>, F, I, Br, Cl, CN, CR<sub>3</sub> or SnR<sub>3</sub>;  
 Q is alkyl, halogen, CF<sub>3</sub>, CN CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>,  
 NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR,  
 NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCF<sub>3</sub>,  
 NHCSR, NHSO<sub>2</sub>CH<sub>3</sub>, NHSO<sub>2</sub>R, OR, COR, OCOR,  
 15 OSO<sub>2</sub>R, SO<sub>2</sub>R, SR; or Q together with the benzene ring  
 to which it is attached is a fused ring system represented  
 by structure A, B or C:



R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  
 20 CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CF<sub>2</sub>CF<sub>3</sub>, aryl, phenyl, halogen,  
 alkenyl or OH.

55. The method according to claim 51, wherein said SARM compound is represented by the structure of formula III.



III

wherein X is a bond, O, CH<sub>2</sub>, NH, Se, PR, NO or NR;

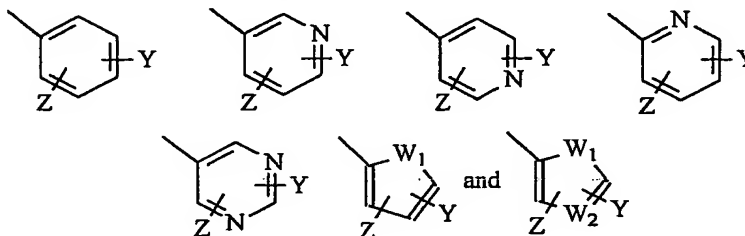
G is O or S;

5 R<sub>1</sub> is CH<sub>3</sub>, CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, or CF<sub>2</sub>CF<sub>3</sub>;

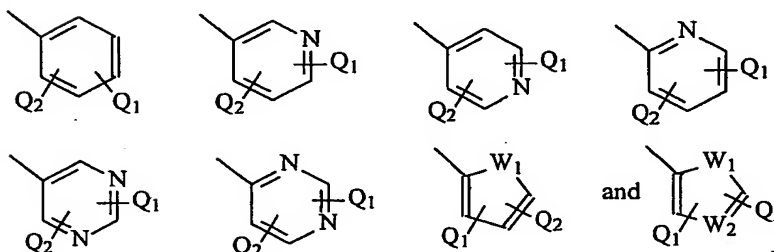
T is OH, OR, -NHCOCH<sub>3</sub>, or NHCOR;

R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  
CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CF<sub>2</sub>CF<sub>3</sub>, aryl, phenyl, halogen, alkenyl or  
OH;

10 A is a ring selected from:



B is a ring selected from:



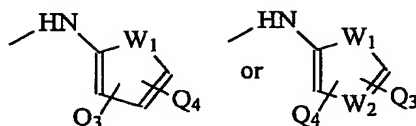
wherein A and B cannot simultaneously be a benzene ring;

15 Z is NO<sub>2</sub>, CN, COOH, COR, NHCOR or CONHR;

Y is CF<sub>3</sub>, F, I, Br, Cl, CN CR<sub>3</sub> or SnR<sub>3</sub>;

Q<sub>1</sub> and Q<sub>2</sub> are independently of each other a  
hydrogen, alkyl, halogen, CF<sub>3</sub>, CN CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>,  
NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR,  
20 NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCF<sub>3</sub>,

NHCSR NHSO<sub>2</sub>CH<sub>3</sub>, NHSO<sub>2</sub>R, OR, COR, OCOR,  
OSO<sub>2</sub>R, SO<sub>2</sub>R, SR,

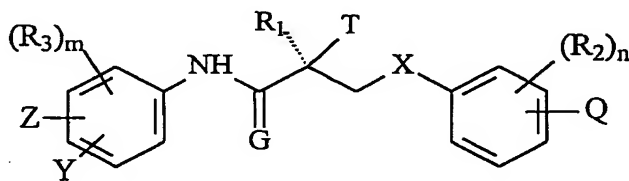


Q<sub>3</sub> and Q<sub>4</sub> are independently of each other a  
hydrogen, alkyl, halogen, CF<sub>3</sub>, CN CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>,  
NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR,  
NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCF<sub>3</sub>,  
NHCSR NHSO<sub>2</sub>CH<sub>3</sub>, NHSO<sub>2</sub>R, OR, COR, OCOR,  
OSO<sub>2</sub>R, SO<sub>2</sub>R or SR;

W<sub>1</sub> is O, NH, NR, NO or S; and

W<sub>2</sub> is N or NO.

56. The method according to claim 51, wherein said SARM compound is  
represented by the structure of formula IV:



IV

wherein X is a bond, O, CH<sub>2</sub>, NH, Se, PR, NO or NR;

G is O or S;

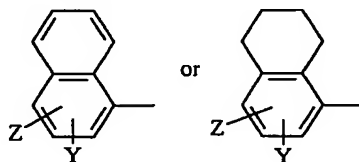
T is OH, OR, -NHCOCH<sub>3</sub>, or NHCOR;

R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  
CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CF<sub>2</sub>CF<sub>3</sub>, aryl, phenyl, halogen, alkenyl or  
OH;

R<sub>1</sub> is CH<sub>3</sub>, CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, or  
CF<sub>2</sub>CF<sub>3</sub>;

$R_2$  is F, Cl, Br, I,  $CH_3$ ,  $CF_3$ , OH, CN,  $NO_2$ ,  $NHCOCH_3$ ,  $NHCOCF_3$ ,  $NHCOR$ , alkyl, arylalkyl, OR,  $NH_2$ ,  $NHR$ ,  $NR_2$ , SR;

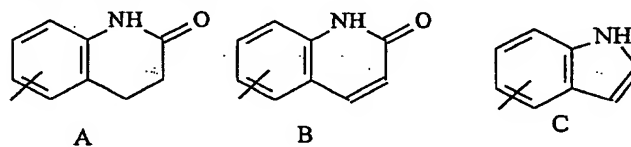
$R_3$  is F, Cl, Br, I, CN,  $NO_2$ , COR, COOH, CONHR,  $CF_3$ ,  $SnR_3$ , or  $R_3$  together with the benzene ring to which it is attached forms a fused ring system represented by the structure:



Z is  $NO_2$ , CN, COR, COOH, or CONHR;

Y is  $CF_3$ , F, Br, Cl, I, CN, or  $SnR_3$ ;

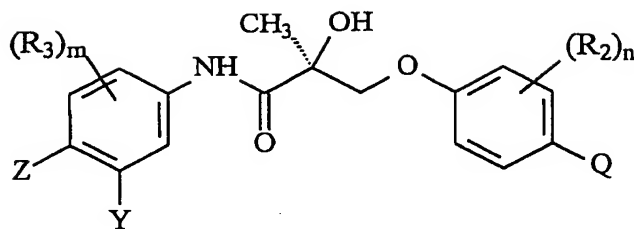
Q is H, alkyl, halogen,  $CF_3$ , CN,  $CR_3$ ,  $SnR_3$ ,  $NR_2$ ,  $NHCOCH_3$ ,  $NHCOCF_3$ ,  $NHCOR$ ,  $NHCONHR$ ,  $NHCOOR$ ,  $ONCONHR$ , CONHR,  $NHCSCH_3$ ,  $NHSCF_3$ ,  $NHCSR$ ,  $NHSO_2CH_3$ ,  $NHSO_2R$ , OH, OR, COR, OCOR,  $OSO_2R$ ,  $SO_2R$ , SR; or Q together with the benzene ring to which it is attached is a fused ring system represented by structure A, B or C:



n is an integer of 1-4; and

m is an integer of 1-3.

57. The method according to claim 51, wherein said SARM compound is represented by the structure of formula V:

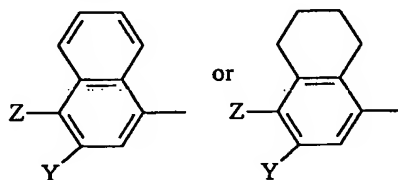


V

wherein

$R_2$  is F, Cl, Br, I,  $CH_3$ ,  $CF_3$ , OH, CN,  $NO_2$ ,  $NHCOCH_3$ ,  $NHCOCF_3$ ,  $NHCOR$ , alkyl, arylalkyl, OR,  $NH_2$ ,  $NHR$ ,  $NR_2$ , SR;

$R_3$  is F, Cl, Br, I, CN,  $NO_2$ , COR, COOH, CONHR,  $CF_3$ ,  $SnR_3$ , or  $R_3$  together with the benzene ring to which it is attached forms a fused ring system represented by the structure:

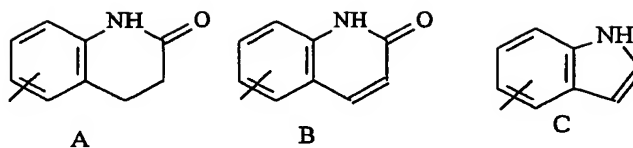


R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  $CH_2F$ ,  $CHF_2$ ,  $CF_3$ ,  $CF_2CF_3$ , aryl, phenyl, halogen, alkenyl or OH;

Z is  $NO_2$ , CN, COR, COOH, or CONHR;

Y is  $CF_3$ , F, Br, Cl, I, CN, or  $SnR_3$ ;

Q is H, alkyl, halogen,  $CF_3$ , CN,  $CR_3$ ,  $SnR_3$ ,  $NR_2$ ,  $NHCOCH_3$ ,  $NHCOCF_3$ ,  $NHCOR$ ,  $NHCONHR$ ,  $NHCOOR$ ,  $OCONHR$ , CONHR,  $NHCSCH_3$ ,  $NHCSCF_3$ ,  $NHCSR$ ,  $NHSO_2CH_3$ ,  $NHSO_2R$ , OH, OR, COR, OCOR,  $OSO_2R$ ,  $SO_2R$ , SR; or Q together with the benzene ring to which it is attached is a fused ring system represented by structure A, B or C:

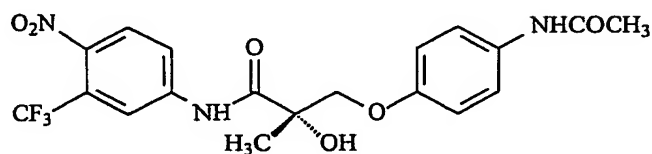


n is an integer of 1-4; and

m is an integer of 1-3.

5

58. The method according to claim 51, wherein said SARM compound is represented by the structure of formula VI.

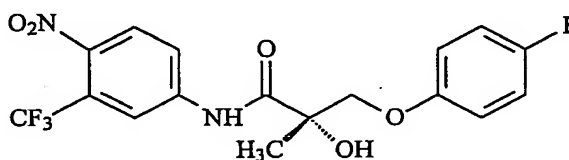


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VI

59. The method according to claim 51, wherein said SARM compound is represented by the structure of formula VII.

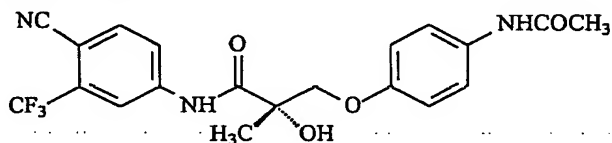
15



VII

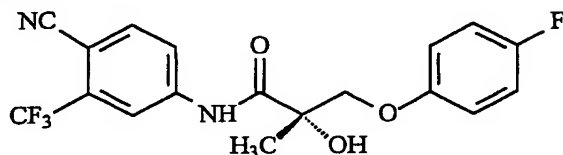
60. The method according to claim 51, wherein said SARM compound is represented by the structure of formula VIII.

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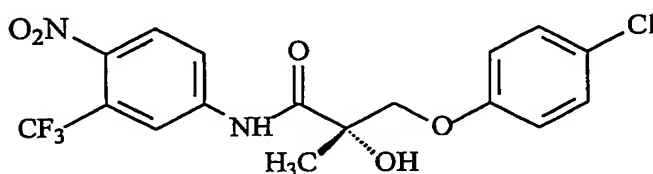
VIII

61. The method according to claim 51, wherein said SARM compound is represented by the structure of formula IX.



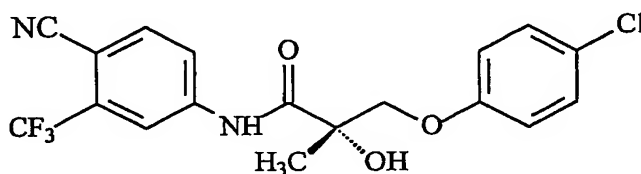
IX

62. The method according to claim 51, wherein said SARM compound is represented by the structure of formula X.



X

63. The method according to claim 51, wherein said SARM compound is represented by the structure of formula XI.



XI

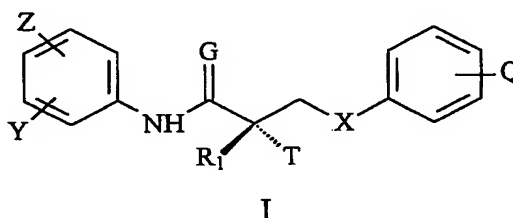
64. The method of claim 51, wherein the SARM is an androgen receptor agonist.
65. The method of claim 51, wherein the SARM has in-vivo androgenic and anabolic activity of a nonsteroidal ligand for the androgen receptor.
66. The method of claim 51, wherein the SARM is an androgen receptor antagonist.
67. The method of claim 51, wherein said SARM has an agonistic effect muscle or bone.
68. The method of claim 51, wherein said SARM has no effect on muscle or bone.
69. The method of claim 51, wherein said SARM penetrates the central nervous system (CNS).
70. The method of claim 51, wherein said SARM does not penetrate the central

nervous system (CNS).

71. The method according to claim 51, wherein said administering comprises administering a pharmaceutical preparation comprising said SARM and/or its analog, derivative, isomer, metabolite, pharmaceutically acceptable salt, pharmaceutical product, hydrate, N-oxide, crystal, polymorph, prodrug, or any combination thereof; and a pharmaceutically acceptable carrier.
72. The method according to claim 71, wherein said administering comprises intravenously, intraarterially, or intramuscularly injecting to said subject said pharmaceutical preparation in liquid form; subcutaneously implanting in said subject a pellet containing said pharmaceutical preparation; orally administering to said subject said pharmaceutical preparation in a liquid or solid form; or topically applying to the skin surface of said subject said pharmaceutical preparation.
73. The method according to claim 71 wherein said pharmaceutical preparation is a pellet, a tablet, a capsule, a solution, a suspension, an emulsion, an elixir, a gel, a cream, a suppository or a parenteral formulation.
74. The method of claim 51, wherein said ADIF-associated condition is sexual dysfunction, decreased sexual libido, hypogonadism, sarcopenia, osteopenia, osteoporosis, alterations in cognition and mood, fatigue, depression, anemia, muscle weakness, hair loss, obesity, polycystic ovarian disease, endometriosis, breast cancer, uterine cancer, ovarian cancer, or any combination thereof.
75. The method of claim 51, wherein said female subject is an aging female subject.
76. A method of preventing, suppressing, inhibiting or reducing the incidence of an Androgen Deficiency in Female (ADIF)-associated condition selected from sexual dysfunction, decreased sexual libido, hypogonadism, sarcopenia, osteopenia, osteoporosis, alterations in cognition and mood, fatigue, depression, anemia, muscle weakness, hair loss, obesity, polycystic ovarian disease, endometriosis, breast cancer, uterine cancer and ovarian cancer, in a female subject, said method comprising the step of administering to said subject a

selective androgen receptor modulator (SARM) compound.

77. The method of claim 76, wherein said method comprises administering an analog, derivative, isomer, metabolite, pharmaceutically acceptable salt, pharmaceutical product, hydrate, N-oxide, crystal, polymorph or prodrug of said SARM compound, or any combination thereof.
78. The method according to claim 76, wherein said SARM compound is represented by the structure of formula I:



wherein G is O or S;

X is a bond, O, CH<sub>2</sub>, NH, Se, PR, NO or NR;

T is OH, OR, -NHCOCH<sub>3</sub>, or NHCOR

Z is NO<sub>2</sub>, CN, COOH, COR, NHCOR or CONHR;

Y is CF<sub>3</sub>, F, I, Br, Cl, CN, CR<sub>3</sub> or SnR<sub>3</sub>;

Q is alkyl, halogen, CF<sub>3</sub>, CN CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>,

NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR,

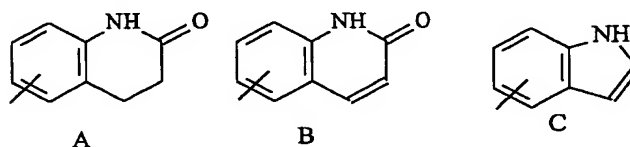
NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCF<sub>3</sub>,

NHCSR, NHSO<sub>2</sub>CH<sub>3</sub>, NHSO<sub>2</sub>R, OR, COR, OCOR,

OSO<sub>2</sub>R, SO<sub>2</sub>R, SR; or Q together with the benzene ring

to which it is attached is a fused ring system represented

by structure A, B or C:

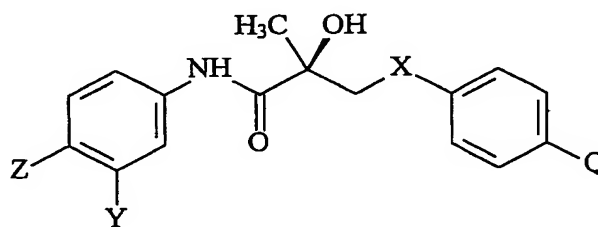


R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  $\text{CH}_2\text{F}$ ,  $\text{CHF}_2$ ,  $\text{CF}_3$ ,  $\text{CF}_2\text{CF}_3$ , aryl, phenyl, halogen, alkenyl or OH; and

$\text{R}_1$  is  $\text{CH}_3$ ,  $\text{CH}_2\text{F}$ ,  $\text{CHF}_2$ ,  $\text{CF}_3$ ,  $\text{CH}_2\text{CH}_3$ , or  $\text{CF}_2\text{CF}_3$ .

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79. The method according to claim 76, wherein said SARM compound is represented by the structure of formula II.

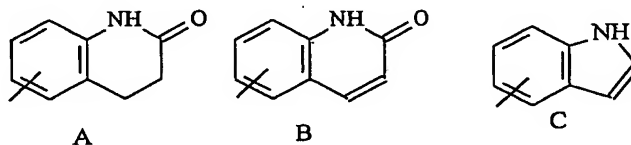


II

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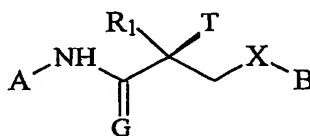
wherein X is a bond, O,  $\text{CH}_2$ , NH, Se, PR, NO or NR;  
 Z is  $\text{NO}_2$ , CN, COOH, COR, NHCOR or CONHR;  
 Y is  $\text{CF}_3$ , F, I, Br, Cl, CN,  $\text{CR}_3$  or  $\text{SnR}_3$ ;  
 Q is alkyl, halogen,  $\text{CF}_3$ , CN,  $\text{CR}_3$ ,  $\text{SnR}_3$ ,  $\text{NR}_2$ ,  
 $\text{NHCOCH}_3$ ,  $\text{NHCOCF}_3$ , NHCOR, NHCONHR,  
 $\text{NHCOOR}$ ,  $\text{OCONHR}$ , CONHR,  $\text{NHCSCH}_3$ ,  $\text{NHCSCF}_3$ ,  
 $\text{NHCSR}$ ,  $\text{NHSO}_2\text{CH}_3$ ,  $\text{NHSO}_2\text{R}$ , OR, COR, OCOR,  
 $\text{OSO}_2\text{R}$ ,  $\text{SO}_2\text{R}$ , SR; or Q together with the benzene ring  
 to which it is attached is a fused ring system represented  
 by structure A, B or C:

20



R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  $\text{CH}_2\text{F}$ ,  $\text{CHF}_2$ ,  $\text{CF}_3$ ,  $\text{CF}_2\text{CF}_3$ , aryl, phenyl, halogen, alkenyl or OH.

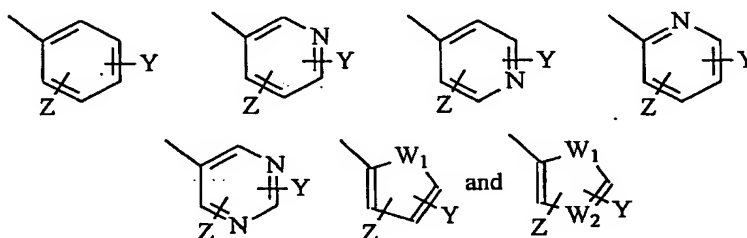
- 5 80. The method according to claim 76, wherein said SARM compound is represented by the structure of formula III.



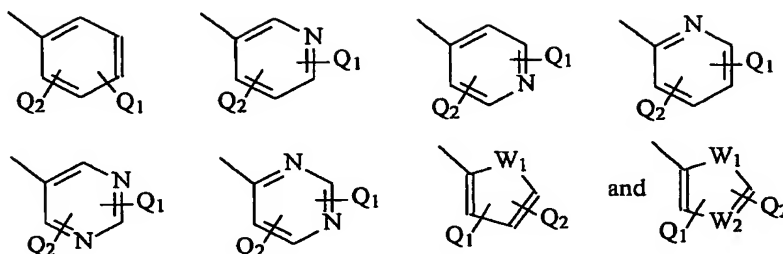
III

- 10 wherein X is a bond, O,  $\text{CH}_2$ , NH, Se, PR, NO or NR;  
 G is O or S;  
 $\text{R}_1$  is  $\text{CH}_3$ ,  $\text{CH}_2\text{F}$ ,  $\text{CHF}_2$ ,  $\text{CF}_3$ ,  $\text{CH}_2\text{CH}_3$ , or  $\text{CF}_2\text{CF}_3$ ;  
 T is OH, OR,  $-\text{NHCOCH}_3$ , or  $\text{NHCOR}$ ;  
 R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  
 15  $\text{CH}_2\text{F}$ ,  $\text{CHF}_2$ ,  $\text{CF}_3$ ,  $\text{CF}_2\text{CF}_3$ , aryl, phenyl, halogen, alkenyl or OH;

A is a ring selected from:



B is a ring selected from:

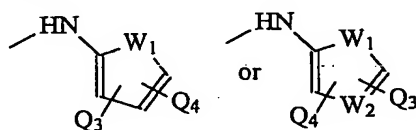


wherein A and B cannot simultaneously be a benzene ring;

Z is NO<sub>2</sub>, CN, COOH, COR, NHCOR or CONHR;

Y is CF<sub>3</sub>, F, I, Br, Cl, CN CR<sub>3</sub> or SnR<sub>3</sub>;

5 Q<sub>1</sub> and Q<sub>2</sub> are independently of each other a hydrogen, alkyl, halogen, CF<sub>3</sub>, CN CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>, NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR, NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCF<sub>3</sub>, NHCSR, NHSO<sub>2</sub>CH<sub>3</sub>, NHSO<sub>2</sub>R, OR, COR, OCOR,  
10 OSO<sub>2</sub>R, SO<sub>2</sub>R, SR,



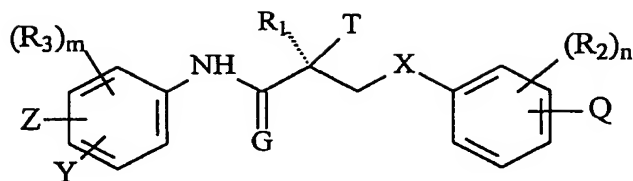
Q<sub>3</sub> and Q<sub>4</sub> are independently of each other a hydrogen, alkyl, halogen, CF<sub>3</sub>, CN CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>, NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR,  
15 NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCF<sub>3</sub>, NHCSR, NHSO<sub>2</sub>CH<sub>3</sub>, NHSO<sub>2</sub>R, OR, COR, OCOR, OSO<sub>2</sub>R, SO<sub>2</sub>R or SR;

W<sub>1</sub> is O, NH, NR, NO or S; and

W<sub>2</sub> is N or NO.

20

81. The method according to claim 76, wherein said SARM compound is represented by the structure of formula IV:



IV

wherein X is a bond, O, CH<sub>2</sub>, NH, Se, PR, NO or NR;

G is O or S;

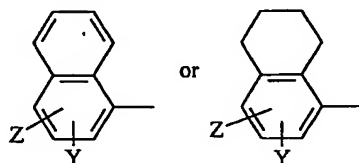
5 T is OH, OR, -NHCOCH<sub>3</sub>, or NHCOR;

R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl, CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CF<sub>2</sub>CF<sub>3</sub>, aryl, phenyl, halogen, alkenyl or OH;

10 R<sub>1</sub> is CH<sub>3</sub>, CH<sub>2</sub>F, CHF<sub>2</sub>, CF<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, or CF<sub>2</sub>CF<sub>3</sub>;

R<sub>2</sub> is F, Cl, Br, I, CH<sub>3</sub>, CF<sub>3</sub>, OH, CN, NO<sub>2</sub>, NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, alkyl, arylalkyl, OR, NH<sub>2</sub>, NHR, NR<sub>2</sub>, SR;

15 R<sub>3</sub> is F, Cl, Br, I, CN, NO<sub>2</sub>, COR, COOH, CONHR, CF<sub>3</sub>, SnR<sub>3</sub>, or R<sub>3</sub> together with the benzene ring to which it is attached forms a fused ring system represented by the structure:

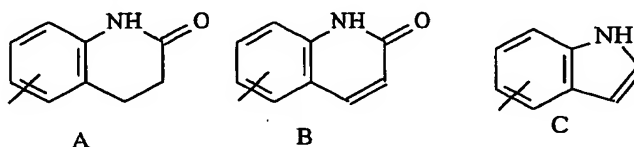


20 Z is NO<sub>2</sub>, CN, COR, COOH, or CONHR;

Y is CF<sub>3</sub>, F, Br, Cl, I, CN, or SnR<sub>3</sub>;

25 Q is H, alkyl, halogen, CF<sub>3</sub>, CN, CR<sub>3</sub>, SnR<sub>3</sub>, NR<sub>2</sub>, NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, NHCONHR, NHCOOR, OCONHR, CONHR, NHCSCH<sub>3</sub>, NHCSCF<sub>3</sub>,

NHCSR N<sub>2</sub>SO<sub>2</sub>CH<sub>3</sub>, N<sub>2</sub>SO<sub>2</sub>R, OH, OR, COR, OCOR, OSO<sub>2</sub>R, SO<sub>2</sub>R, SR; or Q together with the benzene ring to which it is attached is a fused ring system represented by structure A, B or C:

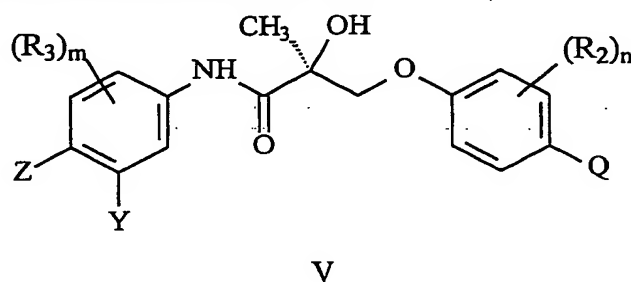


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n is an integer of 1-4; and

m is an integer of 1-3.

- 10 82. The method according to claim 76, wherein said SARM compound is represented by the structure of formula V:



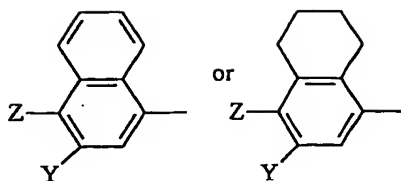
wherein

15

R<sub>2</sub> is F, Cl, Br, I, CH<sub>3</sub>, CF<sub>3</sub>, OH, CN, NO<sub>2</sub>, NHCOCH<sub>3</sub>, NHCOCF<sub>3</sub>, NHCOR, alkyl, arylalkyl, OR, NH<sub>2</sub>, NHR, NR<sub>2</sub>, SR;

20

R<sub>3</sub> is F, Cl, Br, I, CN, NO<sub>2</sub>, COR, COOH, CONHR, CF<sub>3</sub>, SnR<sub>3</sub>, or R<sub>3</sub> together with the benzene ring to which it is attached forms a fused ring system represented by the structure:

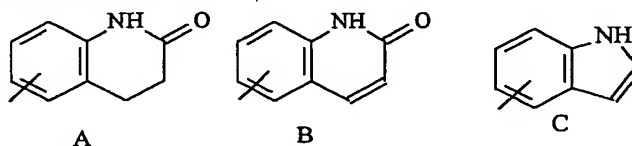


R is alkyl, haloalkyl, dihaloalkyl, trihaloalkyl,  $\text{CH}_2\text{F}$ ,  $\text{CHF}_2$ ,  $\text{CF}_3$ ,  $\text{CF}_2\text{CF}_3$ , aryl, phenyl, halogen, alkenyl or OH;

5 Z is  $\text{NO}_2$ , CN, COR,  $\text{COOH}$ , or CONHR;

Y is  $\text{CF}_3$ , F, Br, Cl, I, CN, or  $\text{SnR}_3$ ;

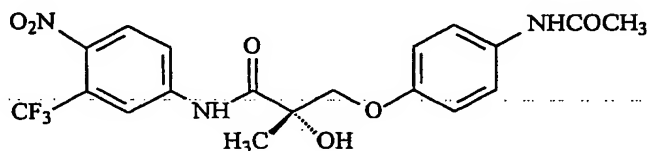
Q is H, alkyl, halogen,  $\text{CF}_3$ ,  $\text{CN CR}_3$ ,  $\text{SnR}_3$ ,  $\text{NR}_2$ ,  $\text{NHCOCH}_3$ ,  $\text{NHCOCF}_3$ ,  $\text{NHCOR}$ ,  $\text{NHCONHR}$ ,  $\text{NHCOOR}$ ,  $\text{OCONHR}$ ,  $\text{CONHR}$ ,  $\text{NHCSCH}_3$ ,  $\text{NHCSCF}_3$ ,  $\text{NHCSR}$ ,  $\text{NHSO}_2\text{CH}_3$ ,  $\text{NHSO}_2\text{R}$ , OH, OR, COR, OCOR,  $\text{OSO}_2\text{R}$ ,  $\text{SO}_2\text{R}$ , SR; or Q together with the benzene ring to which it is attached is a fused ring system represented by structure A, B or C:



15

n is an integer of 1-4; and  
m is an integer of 1-3.

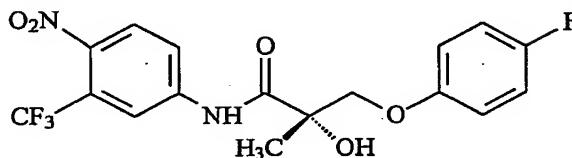
20 83. The method according to claim 76, wherein said SARM compound is represented by the structure of formula VI.



## VI

84. The method according to claim 76, wherein said SARM compound is represented by the structure of formula VII.

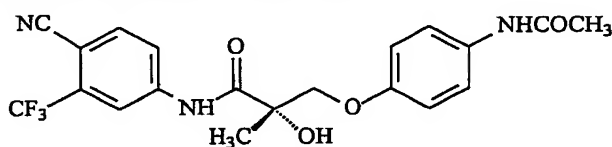
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VII

85. The method according to claim 76, wherein said SARM compound is represented by the structure of formula VIII.

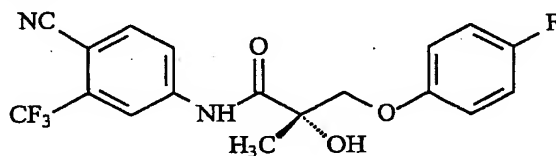
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VIII

86. The method according to claim 76, wherein said SARM compound is represented by the structure of formula IX.

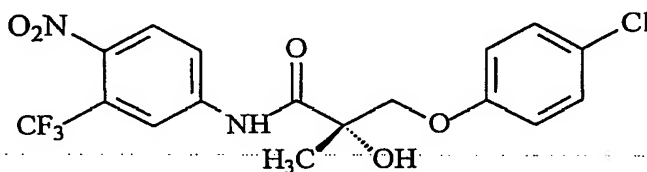
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IX

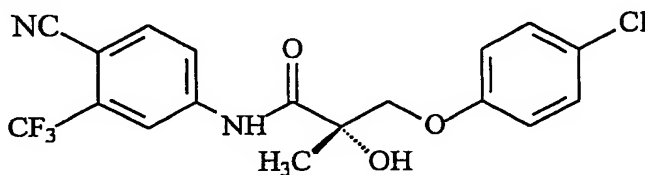
87. The method according to claim 76, wherein said SARM compound is represented by the structure of formula X.

20



X

88. The method according to claim 76, wherein said SARM compound is represented by the structure of formula XI.



XI

- 5 89. The method of claim 76, wherein the SARM is an androgen receptor agonist.
90. The method of claim 76, wherein the SARM has in-vivo androgenic and anabolic activity of a nonsteroidal ligand for the androgen receptor.
91. The method of claim 76, wherein the SARM is an androgen receptor antagonist.
92. The method of claim 76, wherein said SARM has an agonistic effect muscle or bone.
- 10 93. The method of claim 76, wherein said SARM has no effect on muscle or bone.
94. The method of claim 76, wherein said SARM penetrates the central nervous system (CNS).
95. The method of claim 70, wherein said SARM does not penetrate the central nervous system (CNS).
- 15 96. The method according to claim 76, wherein said administering comprises administering a pharmaceutical preparation comprising said SARM and/or its analog, derivative, isomer, metabolite, pharmaceutically acceptable salt, pharmaceutical product, hydrate, N-oxide, crystal, polymorph, prodrug, or any combination thereof; and a pharmaceutically acceptable carrier.
- 20 97. The method according to claim 96, wherein said administering comprises intravenously, intraarterially, or intramuscularly injecting to said subject said pharmaceutical preparation in liquid form; subcutaneously implanting in said subject a pellet containing said pharmaceutical preparation; orally administering to said subject said pharmaceutical preparation in a liquid or solid form; or
- 25 topically applying to the skin surface of said subject said pharmaceutical preparation.
98. The method according to claim 96 wherein said pharmaceutical preparation is a

pellet, a tablet, a capsule, a solution, a suspension, an emulsion, an elixir, a gel, a cream, a suppository or a parenteral formulation.

99. The method of claim 76, wherein said ADIF-associated condition is sexual dysfunction, decreased sexual libido, hypogonadism, sarcopenia, osteopenia, osteoporosis, alterations in cognition and mood, fatigue, depression, anemia, muscle weakness, hair loss, obesity, polycystic ovarian disease, endometriosis, breast cancer, uterine cancer, ovarian cancer, or any combination thereof.
100. The method of claim 76, wherein said female subject is an aging female subject.

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